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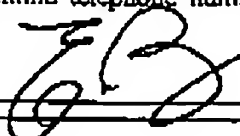
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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| APPLICANTS: | Werner, Bernard M. | EXAMINER: | Dabney, Phylesha L. |
| SERIAL NO.: | 10/046,404 | ART UNIT: | 2643 |
| FILED: | January 14, 2002 | CASE NO.: | HI03027USU (P02017US) |

TITLED: CONSTANT COVERAGE WAVEGUIDE

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## REPLY BRIEF

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## I. INTRODUCTION

The Examiner's Response, which has a mailing date of March 5, 2008, fails to rebut Applicants' arguments that claims 1-8 and 11-28 are not anticipate by Klayman as alleged by the Examiner in the Final Office Action dated June 2, 2006. Specifically, the Examiner's Response interprets the term "continuous control curve" in a manner that is inconsistent with the claim language as a whole. The Examiner's interpretation of "continuous control curve" violates other limitations in the claim. Claim 1 recites: "a *continuous* three-dimensional least-energy-surface *coincident* with the first control curve, second control curve, third control curve and the fourth control curve *that intersects the circular throat and a non elliptical closed controlled surface that defines a mouth*." In order to meet this limitation, a "continuous surface" must be defined by control curves *that intersect the throat AND the mouth*. As Applicants argued in the opening Appeal Brief, Klayman fails to teach or suggest ANY control curve that is continuous between the throat AND the mouth.

## II. EXAMINER'S RESPONSE

**A. The Examiner failed to address Appellant's argument that Klayman does not teach "an inner surface that is continuous between the throat and the mouth of the horn."**

The Examiner's Response to Appellant's argument that Klayman does not teach "an inner surface that is continuous between the throat and the mouth of the horn" ignores the claim's limitations: *continuous between the throat and the mouth*." If Klayman does teach any type of "control curve," that control curve cannot be as claimed in the pending claims if it is not *continuous between the throat and the mouth*.

As Applicants argued in the opening brief, Klayman does not teach control curves that are *continuous between the throat and the mouth*. Klayman teaches a sectioned horn made up of four sections between the throat (where the sound transducer is located) and the mouth. The inner surface of the sectioned horn has discontinuities where each section connects to the next section. Referring to FIGURE B (inserted below for convenience), there are discontinuities at:

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1. Small end **16** of the cone-shaped driver coupling section **14**, where the cone-shaped driver coupling section **14** is coupled to the mating section **12**;

2. Large end **18** of the cone-shaped driver coupling section **14** where the cone-shaped driver coupling section **14** is coupled to the sound-to-air coupling section **20**; and

3. Outer periphery of the sound-to-air coupling section **20** where the dispersion lip **26** is formed.

Even one single discontinuity anywhere between the mating section **12** and the dispersion lip **26** is sufficient to preclude a finding of anticipation. Klayman has **three**.
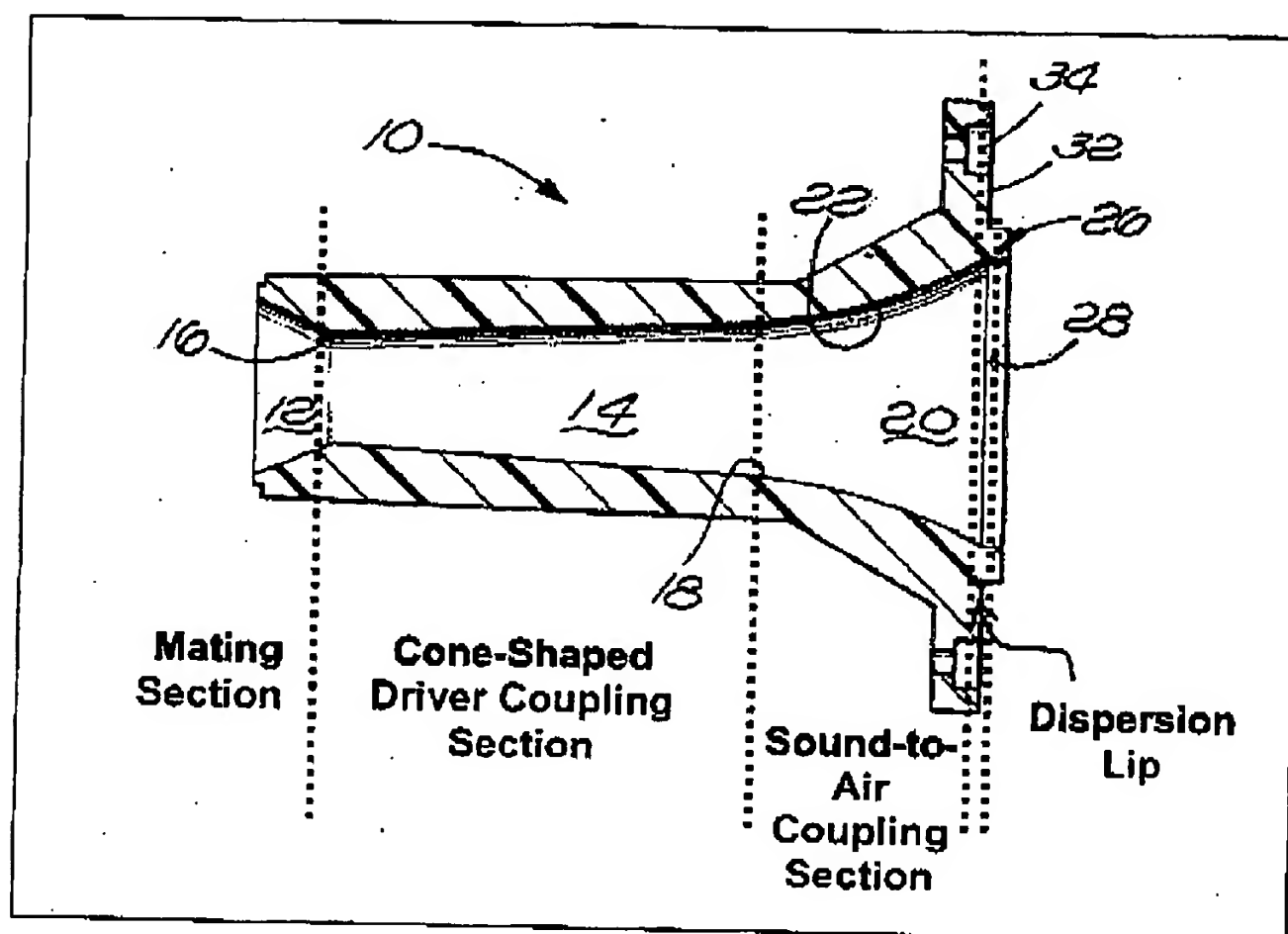


**FIGURE B**

The Examiner ignored each of these arguments in the Examiner's Response. The Examiner's Response merely stated: "The Klayman reference satisfies this teaching by providing a waveguide (10) having two "continuous" control curves (22, as shown in figure 3) and two additional control "continuous" curves (24, as shown in figure 4), a circular throat (12), and a non-elliptical mouth (20, square shaped.)" The Examiner

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appears to argue that the "continuous control curves" recited in claim 1 are disclosed in Klayman as elements 22 and 24 in FIGs. 3 and 4. However, neither element 22 nor 24 are control curves at all. Element 22 is "a center line of the exponential section walls." Klayman 2:63-64. As noted above, the exponential section walls do not extend from the throat to the mouth. Therefore, the center line of the exponential section walls cannot teach a continuous control curve as recited in claim 1.

Similarly, element 24 is a corner of the cross-section of the exponential section walls. Klayman 2:62-63. Again, the exponential section walls do not extend from the throat to the mouth. Therefore, the corner of the exponential section walls cannot teach a continuous control curve as recited in claim 1.

The Examiner's Response fails to address this inconsistency with the language of the claims.

**B.    The Examiner failed to address Appellant's argument that Klayman does not teach an inner surface that is a least-energy-surface extending between the throat and mouth of the horn.**

The Examiner's Response to Appellant's argument that Klayman does not teach "an inner surface that is a least-energy surface extending between the throat and the mouth of the horn" ignores the claim's limitations: *extending between the throat and the mouth.*" If Klayman does teach any type of "inner surface that is a least-energy-surface," that inner surface cannot be as claimed in the pending claims if it does not *extend between the throat and the mouth.*

Appellants argued that "Klayman teaches using a raised dispersion lip to provide sound diffraction. Klayman 3:1-24. The sound diffraction "provides a square edge to diffract sound in the shape of a broad-based pyramid around the horn mouth, thereby creating extremely wide sound dispersion in both the horizontal and vertical planes." *Klayman* 1:39-42. The need for a raised dispersion lip teaches away from a waveguide having an inner surface that is a least-energy-surface. Klayman also teaches a *sectioned* horn-a horn sectioned between the throat and the mouth, which teaches away from a surface that is a least-energy-surface intersecting the throat and the mouth."

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The Examiner failed to address any of these arguments. Instead, the Examiner stated: "The Klayman reference satisfies this teaching by providing a mirrored circular conical continuous curves (22, 24; figures 3-4) subtended by a throat (12) and a mouth (20) having a least-energy-surface (16, 18, 28; inner walls of the different sections) which provides <u>a minimum change in curvature (symmetrical sound dispersion with minimal discontinuities, col. 2 lines 59-68) relative to the specified controlling geometry over the surface."</u> The Examiner failed to reconcile how a *sectioned horn* that the Examiner admits is disclosed in Klayman can also be a least-energy-surface intersecting the throat and the mouth. Applicants note that the passage from Klayman reference by the Examiner (at col. 2, lines 59-68) refers to one section of the Klayman horn: the exponential section. The Examiner is not permitted to read the prior art out of context of the recited claim language.

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## III.  CONCLUSION

In view of the above, claims 1-8, 11-28 are not anticipated by Klayman because Klayman fails to teach or disclose a constant coverage waveguide that includes a continuous three-dimensional least-energy-surface coincident with the control curves that intersect a circular throat and non elliptical closed control surface that defines a mouth as recited in independent claims 1, 7, 12, 13, and 14. Reversal of the final rejections of these claims and allowance of this patent application are earnestly solicited.

Respectfully submitted by,

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